Vs Va Vsc Ve Voltages

Buffer Y

SMPS

X Main

Y Main

Logic Main PCB

Buffer X

Buffer E

Spkr R

Main PCB

Buffer F

Spkr L

SERVICE BULLETINS

-3/28/11
Reddish blur or red dots on the screen after warm-up - ASC20110328001
-See pages 6 & 7.

Please check GSPN for parts update.

Version	Parts No	Short Description
ALL	BN44-00330A	SMPS
NY01 LJ41-07018A	BN96-12391A	Buffer Y
NY02 LJ41-06755A	BN96-12412A	Buffer Y
ALL	BN96-12950A	X Main
ALL	BN96-12951A	Buffer X
ALL	BN96-12952A	Y Main
ALL	BN96-12953A	Logic Main PCB
ALL	BN96-12954A	Buffer E
ALL	BN96-12955A	Buffer F
ALL LJ41-08459A	BN96-12956A	Buffer Y
NY02	BN96-13389C	Function & IR PCB
NY01	BN96-13389C	Function & IR PCB
ALL	BN96-15649A	Main PCB
NY01	BN96-12706A	Panel
NY02	BN96-12707A	Panel
N204	BN96-18249A	Panel
ALL	6002-001294	Stand Screw
ALL	6003-000337	Stand Screw
ALL	6003-001239	Stand Screw
ALL	BN63-06456A	Bottom Cover
NY02	BN96-11138A	Stand Guide
NY01	BN96-11138A	Stand Guide
ALL	BN96-12979A	Front Cover
NY01	BN96-13005D	Rear Cover
NY02	BN96-13005D	Rear Cover
ALL	BN96-16055A	Stand Base
ALL	BN59-00997A	Remote
ALL	BN96-12469G	LVDS Cable
ALL	BN96-12832C	Speaker
NY01	4301-000103	Battery
NY02	4301-000103	Battery
ALL	BN63-01798B	Cleaning Cloth
NY02	BN96-10788A	Accessory Pack
NY01	BN96-10788A	Accessory Pack

HELP : 1-888-751-4086 (Tech Support)
        1-866-894-0637 (FE)

GSPN
http://gspn3.samsungcsportal.com
PLUS ONE
http://my.plus1solutions.net/clientPortals/samsung

HOT TIPS

-**Power On Problems:** (pg. 3)
-**Video Problems:** (pg. 4)
- **Bulletin "Red Dots":** (pg. 6 & 7)

FIRMWARE

Please check Samsung.com for latest update.

- 3/16/11 **IMPORTANT**
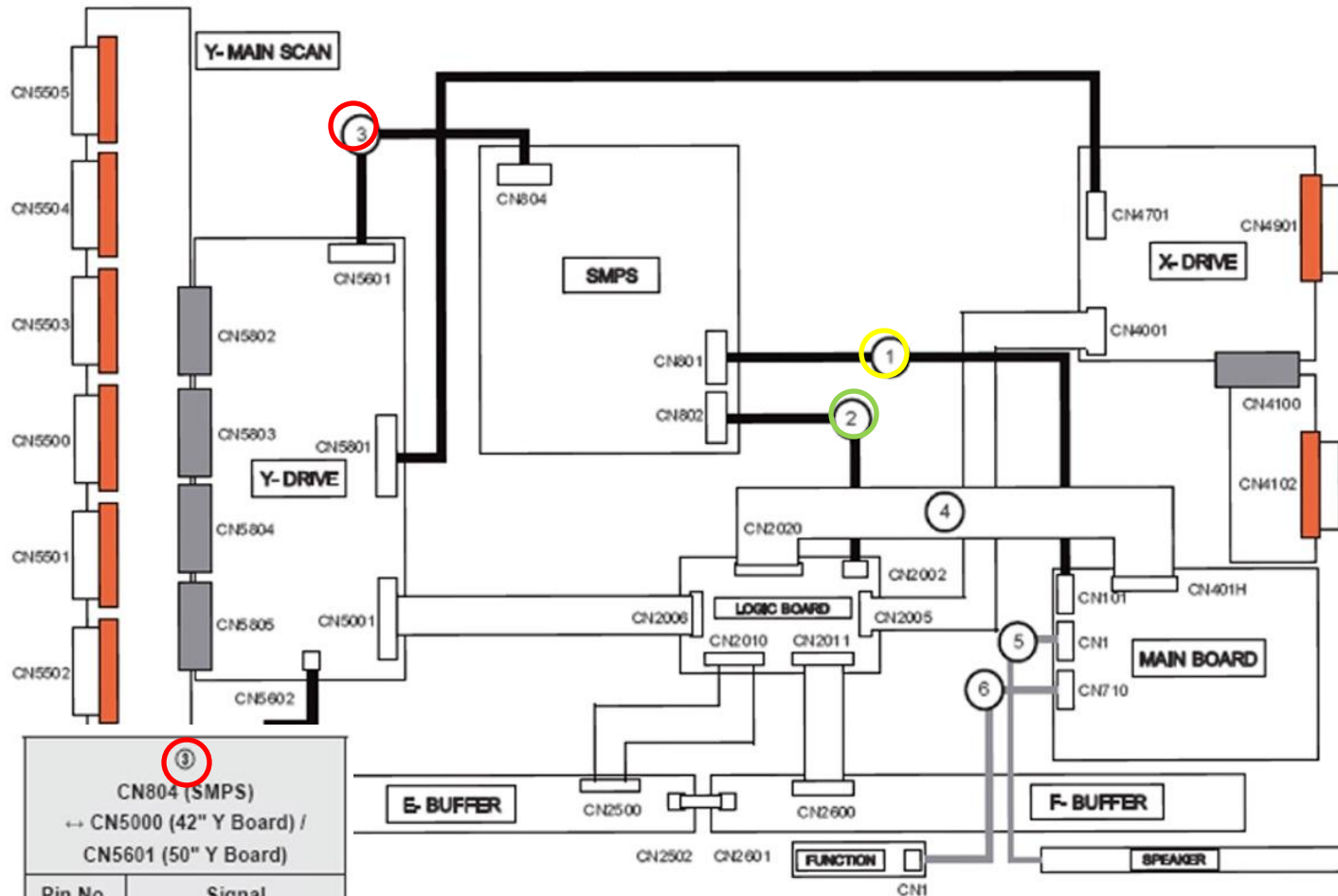-T-SAT4AUSHC(1008.2 or 1008.3).EXE
-You should check serial number and bulletin before updating firmware.
-Reason: Red Dot issue
-**See pages 6 & 7.**

--6/25/10. 1006.0
-Buzzing noise level will be reduced

① CN801 (SMPS)
↔ CN101 (Main Board)

Pin No.	Signal
1	PS_ON
2	STBY
3	GND_15Vamp
4	15Vamp
5	GND_5.3V
6	GND_5.3V
7	5.3V
8	5.3V
9	GND_15V
10	15V
11	15V
12	5.3V

③ CN804 (SMPS)
↔ CN5000 (42" Y Board) /
CN5601 (50" Y Board)

Pin No.	Signal
1	Vs
2	Vs
3	GND
4	Vg
5	GND
6	Va

② CN802 (SMPS)
↔ CN2002 (Logic Board)

Pin No.	Signal
1	D5.3V
2	D5.3V
3	GND
4	GND
5	PS_ON
6	VS_ON

Power On Sequence
-**STBY 5V (Pin 2 CN801)**
-**PS_ON (approx 3.3V – 0V) (Pin 1 CN801)**
-**VS_ ON (approx 0V – 3.3V) (Pin 6 CN802)**
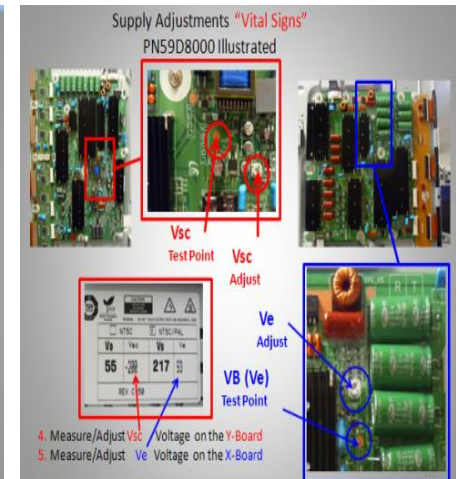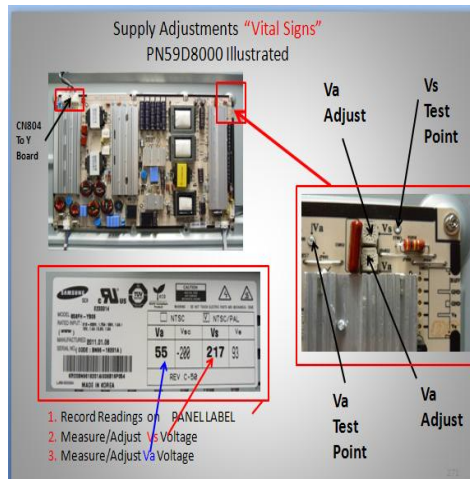
2

"Troubleshooting"

Activating Power & Logic Board Test Patterns without Main Board:

1. Remove Power Cord to Panel
2. Short Highest 2 Pin #s on Logic Board Test Jig (Can be 4 Pin or 6 Pin)
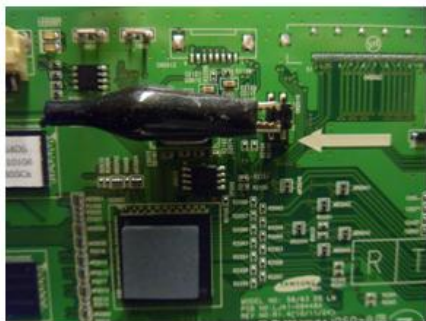
3. Remove Power Connector at Main Board (keeping connection to SMPS)
4. Short "Power On" Pin to Circuit Ground on Power Connector to SMPS.
5. Connect Power Cord to Panel

Supply Adjustments "Vital Signs"
PN59D8000 Illustrated

CN804 To Y Board

Va Adjust

Vs Test Point

Va Test Point

Va Adjust

	Va	Vsc	Vs	Ve
	55	-200	217	93

1. Record Readings on PANEL LABEL
2. Measure/Adjust Vs Voltage
3. Measure/Adjust Va Voltage

Supply Adjustments "Vital Signs"
PN59D8000 Illustrated

Vsc Test Point

Vsc Adjust

Ve Adjust

VB (Ve) Test Point

	Va	Vsc	Vs	Ve
	55	-200	217	93

4. Measure/Adjust Vsc Voltage on the Y-Board
5. Measure/Adjust Ve Voltage on the X-Board

SAMPLE VIEW & READINGS

Power Supply Trouble Shooting Notes:

2010/2011 models

Will not be run with the "X" or "Y" main disconnected. The SMPS will shut down immediately. However if a meter is first connected to the test point when power is applied it will read the correct voltage briefly before shutting down.(You have enough time to check key voltages)

CAUTION: Do not reconnect any connectors to SMPS or Y/X Boards until power has been turned off long enough for Vs to drop below 10V or damage will occur to X or Y Boards. .

Over Current Protection

For the SMPS Power Supply... If a short circuit occurs on either the VS or VA voltage lines, the SMPS stops operating, but should not fail. When the short circuit is removed from the source line, the Power Supply will operate normally again. **Many SMPS Supplies are replaced needlessly!**

"VITAL SIGNS"

.

When troubleshooting, It's very important to first check **Vs, Va, Vsc & Ve**
If **Vs** is missing (0V), disconnect power and check for short. Use ohm meter to measure resistance while disconnecting Y-Board & X-Board supply feeds one at a time.
Turn Power On and Test SMPS with short connector removed for correct Vs voltage verification. (It may only come up briefly but to full level). Again be careful not to reconnect Power Connectors until Vs falls below 10V.

If **Va** is low or missing, disconnect Supply Feed to Address Boards and Check to see if SMPS Supply is restored. (Note Va feed normally passes through the Y-Drive to the Address Boards (Logic Buffer Boards).

If **Vsc** is low or missing and Vs was OK, the failure is with the **Y-Board** since the Y-Board generate the Vsc voltage from the Vs supplied by the SMPS.
If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board** since the Ve is generated by the X-Board from the Vs supplied by the SMPS. Please note in some rare cases the Ve may be generated by the Y-Board feed to the X-Board.)   **Other SMPS Voltages:**
Check Low Voltage feeds to the Main Board and other supplied Assemblies.

SAMSUNG

TROUBLESHOOTING VIDEO PROBLEMS

1. Verify Video Operation
a)   **Customer Picture Test** (if available)
b)   **"Display"** (If display is OK source is suspected)
c)   Substitute with known good Source
         (**external DVD or Signal Generator**)

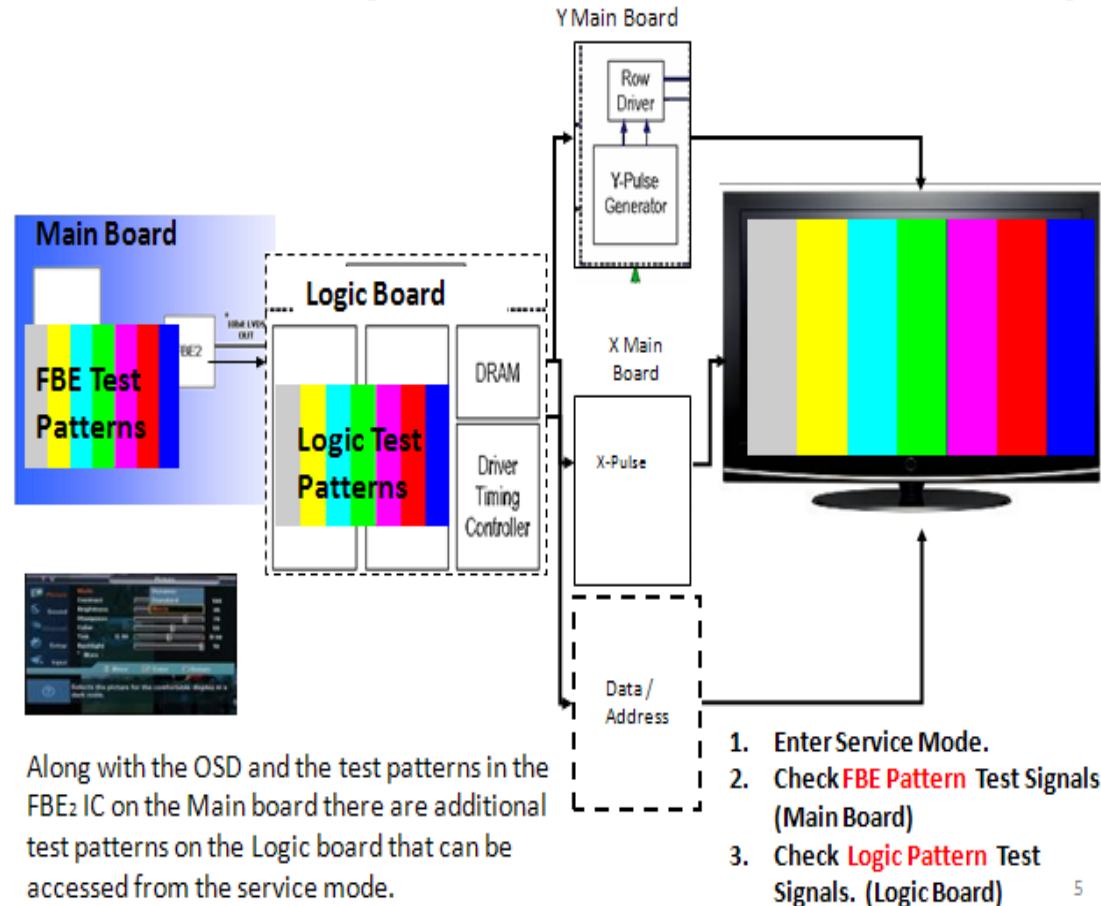### 2. Using Test Patterns in Service Mode
- ENTERING SERVICE MODE -

Customer Remote
1.   Power off
2.   Mute, 182, Power

Service Remote
1.   Power On
2.   Info, Factory

3. Determine cause
a)   If Logic pattern is NG; Logic
       board, Logic buffers or Panel
       are suspect.
b)   If FBE patterns is NG and Logic
       is OK; Main or LVDS cable are
       suspect.
c)   If both are OK it is likely a
       source issue.

2010 PDP Signal Path for Troubleshooting

Y Main Board

Row Driver

Y-Pulse Generator

Main Board

FBE2

MINI LVDS OUT

Logic Board

FBE Test Patterns

Logic Test Patterns

DRAM

Driver Timing Controller

X Main Board

X-Pulse

Data / Address

Along with the OSD and the test patterns in the FBE₂ IC on the Main board there are additional test patterns on the Logic board that can be accessed from the service mode.

1. Enter Service Mode.
2. Check **FBE Pattern** Test Signals. (Main Board)
3. Check **Logic Pattern** Test Signals. (Logic Board)

5

"Y" Board Failure Examples

Notice how each error contains a horizontal line

These examples show Y board errors, because the Y electrodes run horizontally, errors can often be seen across the screen.

2010 & 2011 Y board errors will be detected by the Logic Board and often create a High Voltage Power Down ("VS ON" to Off) condition.

When failure exists on either the Y-Board or the Y-Buffer Boards, be sure to replace both assemblies. A failure on either Board can create a failure on both assemblies.

Y Buffer Boards Failures
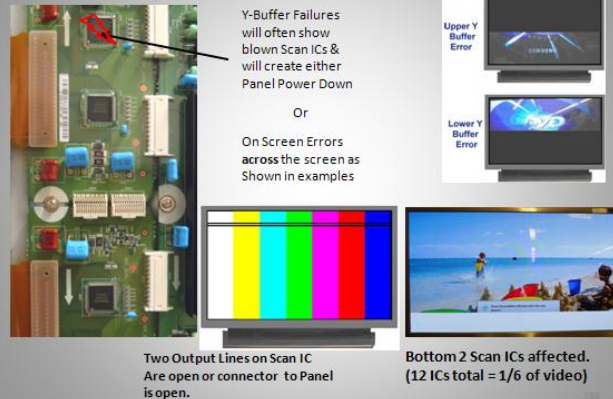
Y-Buffer Failures will often show blown Scan ICs & will create either Panel Power Down

Or

On Screen Errors **across** the screen as Shown in examples

Upper Y Buffer Error

Lower Y Buffer Error

Two Output Lines on Scan IC Are open or connector to Panel is open.

Bottom 2 Scan ICs affected. (12 ICs total = 1/6 of video)

"X" board Failure Examples
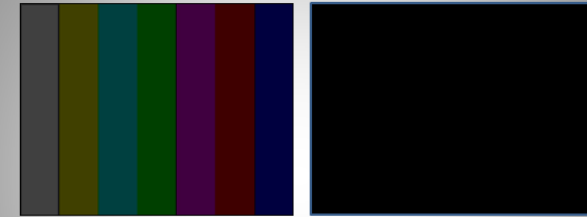
- In this left screen example, the sustain signal from the X board is low or missing.
- For 2009 Models and Older: Verify operation of the X board by disconnecting the power supply cable to the X board. If the other boards are working the picture will be dark.
- If the X-Board Power or Y-Board Power is removed, however, on 2010 or 2011 Models, an error will be detected and the VS Supply from the SMPS will be turned off by the Logic Board. A Black Screen (on right) will occur.
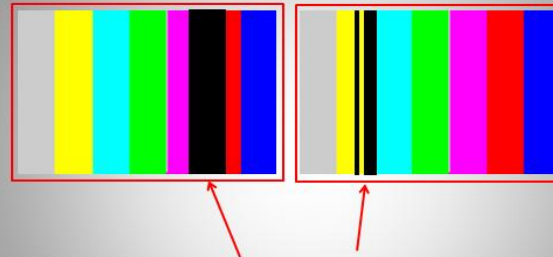
Logic Board Failure Examples
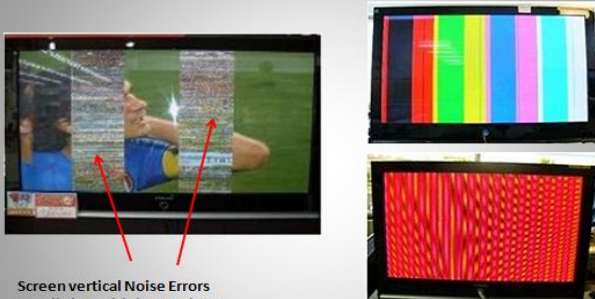
Screen vertical Noise Errors usually in Multiple Locations

The examples show the panel illuminated but displays with incorrect noisy video.
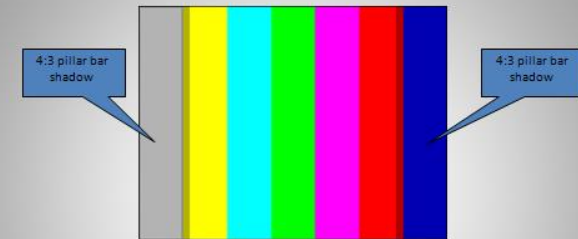
Logic Buffer Board Failure Examples

Normal Video Screen with added Vertical Black, Red, Green, or Blue Bar Errors

The examples show the panel illuminated, display is Normal except for area of Logic Buffer Board Failure.

"X" board Failure Examples

4:3 pillar bar shadow

4:3 pillar bar shadow

- In this example the **Ve** initialize signal is low or missing creating image retention. No Erasing.
- Troubleshoot the X Board by verifying that the Ve Voltage is correct with the label on the Panel.

Main Board Failure Symptoms
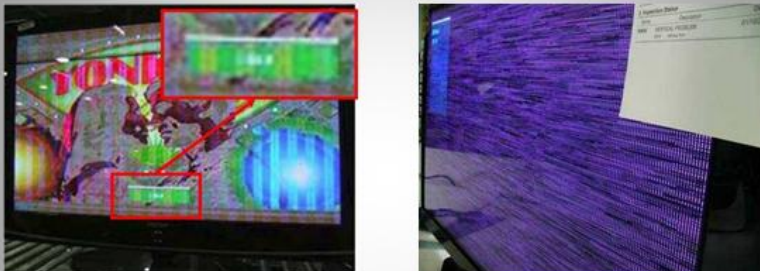
- Main Board errors are similar to logic errors but the problem can be on a single source such as the tuner.
- If the Menu also shows the defect the main board is suspected

PDP Panel Troubleshooting

Horizontal Error

Magnified View
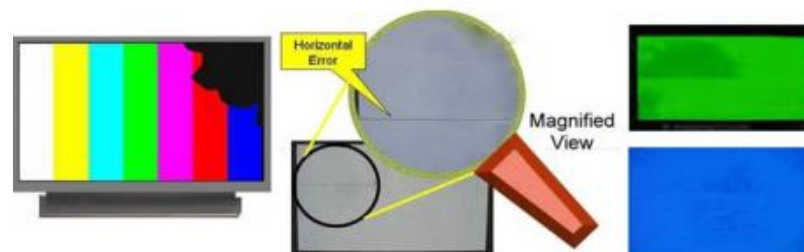
Plasma Panel Failure Examples

- Plasma Panel failure can usually be identified by observation. Single sub pixel columns or rows that are black or white always are panel failures. Other lines or lines that vary with content are almost never panel failures. Individual pixel errors are almost always panel related.

ALIGNMENTS:

SPECIAL NOTES:

See bulletin "Red Dots" for correction/ adjustments for this model.

1. **Check/Adj. VS, VA, VE, & VSC** according to Panel Label and Diffusion test. (**see bulletins** for any special notes before making changes)

2. **Check/Set Option Bytes:**

   - ENTER SERVICE MODE -

   Customer Remote
   1. Power off
   2. Mute, 182, Power
   Service Remote
   1. Power On
   2. Info, Factory

DIFFUSION TEST/ADJ. (cell miss-firing, older units)
- **Allow the unit to warm up 15 to 20 minutes**
- **Access the Burn Protect Sig. Pattern in Cust. Menu.**
- **Adjust the Vs volts until screen errors are gone in both dark and bright areas.**
- **Adjust the Vs volts within +/- 10V on the panel label.**

Model Code	Side Label	F/W directory	Option							
			Type	Model	Tuner	Region	DDR	Light Effect	Audio AMP	Front Color
PN50C430A1DXZA	NY01	T-SAT4AUSHC	50HHcD4	PC430	Xugang	US	ETRON	OFF	TAS5715	S-C-BLK
	NY02	T-SAT4AUSHC	50HHcD4	PC430	Xugang	US	ETRON	OFF	TAS5715	S-C-BLK

SAMSUNG

SERVICE BULLETIN	
PRODUCT:	PDP
BULLETIN NUMBER:	ASC20110328001
BULLETIN DATE:	March 28, 2011
MODELS:	PN50C430; PN50C450

NOTE: This Service Bulletin supersedes ASC20110223001. Please remove ASC20110223001 from your files and replace with ASC20110328001.

SUBJECT: Reddish blur or red dots on the screen after warm-up

SYMPTOM: Dark areas will display red dots. Running the screen wipe will show red discharge in the dark area of the image. On a black screen you may see a reddish background (see images below).

Reddish background   Red dots seen in dark area

Note: Consult the Samsung Service Website at (service.samsungportal.com) for the Service Manual and other information on this product.

This information is published for experienced repair technicians only and is not intended for use by the public. It does not contain warnings to advise non-technical individuals of possible dangers in attempting to service a product. Only experienced professional technicians should repair products powered by electricity. Any attempt to service or repair the product or products dealt with in this information by anyone else could result in serious injury or death. Information provided in this bulletin is subject to change or update without notice.

REPAIR: For production range of May-2010 through July-2010 (refer to Model-Serial number label on the rear of the TV)

1. Call the customer prior to service
   a. Determine the PDP firmware version
      o If the version is 1008.2 or higher, onsite service is required; proceed to step 3
      o If the version is earlier than 1008.2
         ✓ Direct the customer to Samsung.com/ 1 800 Samsung to obtain firmware upgrade 1008.2
         ✓ If the customer is unable to upgrade the TV, proceed to step 2
         ✓ Submit "Phone fix" warranty bill and close the ticket
         ✓ Proceed to step 5
2. Determine what firmware version is currently installed
3. If the firmware version is earlier than 1008.2:
   a. Verify the panel voltage adjustments match the voltage sticker located on the PDP panel (refer to the photos below to locate)
   b. Download 1008.2 from CSPN and upgrade the PDP (follow directions listed with the firmware on CSPN)
   c. Power on the PDP and retest using the screen burn wipe test pattern
   d. If the red dots/reddish blur is still present proceed to step 4.
   e. Issue resolved
   f. Proceed to step 5
4. If the version is 1008.2:
   a. Download firmware version 1008.3 and upgrade the PDP (follow directions listed with the firmware on CSPN)
   b. Adjust the panel voltages (refer to the photos below to locate)
      o Vs to +205VDVC
      o Vscan to –178VDC
   c. Power on the PDP and retest using the screen burn wipe test pattern
   d. If the issue is resolved, proceed to step 5
   e. If problem persists,
      o Replace the PDP module and submit warranty bill under normal process
      o Proceed to step 5
5. Repair complete

Note: Do not perform this upgrade on TVs that fall out of the May-Sept production range.

Note: Consult the Samsung Service Website at (service.samsungportal.com) for the Service Manual and other information on this product.

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REPAIR: For production range of Aug-2010 through September-2010 (refer to Model-Serial number label on the rear of the TV)

1. Call the customer prior to service
    a. Determine the PDP firmware version
        o If the version is 1008.3, onsite service is required; proceed to step 3
        o If the version is earlier than 1008.3
            ✓ Direct the customer to Samsung.com/ 1 800 Samsung to obtain firmware upgrade 1008.3
            ✓ If the customer is unable to upgrade the TV, proceed to step 2
            ✓ Submit "Phone fix" warranty bill and close the ticket
            ✓ Proceed to step 5
2. Determine what firmware version is currently installed on the PDP.
3. If the firmware version is 1008.3 skip to step 4
    a. Verify the panel voltage adjustments match the voltage sticker located on the PDP panel
    b. Download 1008.3 from CSPN and install (follow directions that are listed with the firmware on CSPN)
    c. Power on the PDP and retest using the screen burn wipe test pattern
    d. If the red dots/reddish blur is still present proceed to step 4.
    e. Issue resolved
    f. Proceed to step 5
4. Adjust Vs and Vscan voltages on the PDP panel:
    a. Adjust the panel voltages (refer to the photos below to locate)
        o Vs to +205VDVC
        o Vscan to −178VDC
    b. Power on the PDP and retest using the screen burn wipe test pattern
    c. If the issue is resolved, proceed to step 5
    d. If problem persists,
        o Replace the PDP module and submit warranty bill under normal process
        o Proceed to step 5
5. Repair complete.

Note: Do not perform this upgrade on TVs that fall out of the May-Sept production range.

Note: Consult the Samsung Service Website at (service.samsungportal.com) for the Service Manual and other information on this product.
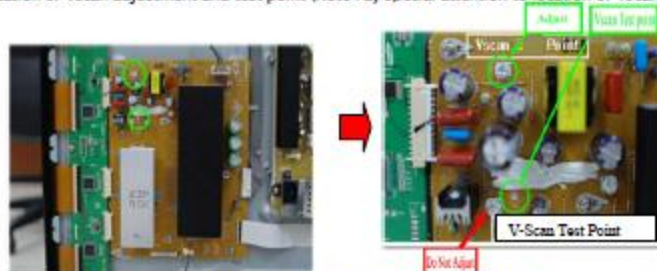
Location of Voltage sticker on the PDP panel

Location of Vs adjustment and test point

Location of Vscan adjustment and test point (Note Pay special attention to location of Vscan adj)

Note: Consult the Samsung Service Website at (service.samsungportal.com) for the Service Manual and other information on this product.